The Best Things in Life Are Free:

How to Use Medical Journal Abstracts

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Medical journals provide information that improves the quality of medical care as well as offer continuing education opportunities. They are published primarily for physicians, but they can serve a similar purpose for medical transcriptionists (MTs), providing continuing education opportunities and also improving the quality of the care MTs render by improving the quality of transcribed reports. Specifically, medical journals are an ideal resource for (1) locating terminology, (2) building a medical knowledge base, and (3) determining current usage. But best of all, medical journals are indexed in an easy-to-use Internet database, and the abstracts, which contain all the key information, are free!

As a terminology resource, you can rely on medical journals, and their abstracts, for new, old, and hard-to-find terminology. You can determine a correct spelling when other resources disagree. They are a wonderful resource for eponyms because inventors of new procedures or equipment always publish their research. For example, there is a cardiovascular surgery called a "maze procedure," which you may find listed incorrectly in some resources as an eponym, i.e., a Maze procedure, or even as an acronym, MAZE. A medical journal search will prove that the inventor of this procedure named it for the puzzle, i.e., a maze, and it is neither a proper noun nor an acronym.

What you are less likely to find in medical journals are casual medical slang or exhaustive lists of brand names. Brand names are discussed in the context of a new type of product or when associated with the only brand of a particular product. If you can't find a brand name in a medical journal search, it just means its name was not mentioned—not that it doesn't exist.

A knowledge-base resource is one that helps you build your understanding of medical concepts. It isn't enough to know how to spell terms if you can't be certain if you are using them correctly. By researching a particular medical procedure or treatment in a medical journal, you can learn the why and the how, instead of just the what, making it less likely that your work will contain critical medical errors. Medical journals aren't the only resource for this level of detail, but medical journal research exposes you to such a variety of information that your knowledge-base grows exponentially with regular use.

Medical journals are actually the only genuine source of current usage. Usage is dynamic—it is always changing—and traditional print resources, including dictionaries, word books, and style guides, take much longer to roll off the press than do medical journals, which are published at shorter intervals, often monthly or in some cases even weekly. A random

Google search (**www.google.com**) may tell you what else might appear in print anywhere on the Web but not what should be transcribed in a medical report, whereas peer-reviewed medical journals are subjected to scrutiny of both content and style. Note also that MT reference books take their cues on current usage from medical journals. Instead of waiting for the next edition of a word book to find out if a two-part term has dropped its hyphen, you can search current medical literature yourself and stay ahead of trends.

So does it make sense to bypass word books and go straight to medical journals as a primary research tool? No. In fact, you are likely to find it more convenient to use certain MT-specific reference books because they are focused on MT needs, portable, following you from work station to work station, and are still available even when the Internet isn't. Some MT reference books also come on CD, adding electronic search capability to the reliability of a resource written specifically for an MT audience. So there will be times when you will want to reach for a book or launch a software reference before searching medical journals.

Even among online reference tools, medical journals may still not be your very first stop, depending upon what you are looking for. If you know a term but just need a spelling, go to **www.onelook.com** where you can search *Dorland's*, *Stedman's,* and *Webster's* with a single mouse click. If you aren't even sure what you heard and can't establish the type of word or phrase you need, you might Google a phonetic spelling or a known phrase in your document (also known as a context search) just to see what comes up. However, you will then want to do a medical journal search to confirm information you find elsewhere, save for brand names. For brand names, go directly to the manufacturer's Web site, but avoid distributors' sites or any other third party.

What Is in a Medical Journal?

Medical journals contain peer-reviewed articles. *Peer-reviewed* means that the publishers of a medical journal don't just receive an article and print it after a little bit of copyediting. Instead, they send it out to multiple experts in the author's own field—his or her peers—and ask for a critical review. Experts analyze the relevance and accuracy of the research and ensure that the author's conclusions stand up to scientific scrutiny. There may even be blind reviews in which references to the author are removed so that any research reported is judged fairly. Peer-reviewed articles go through many sets of very professional eyes. The names of people and drugs and

procedures and equipment can be counted on to be correct. It is not impossible for a typographical error to appear in the final copy, but it is rare—and typos are corrected in the medical journal database as soon as they are discovered. This makes peer-reviewed medical journals one of the best resources for both accurate and current information.

Medical journals are published in every medical specialty, including some very obscure and specialized niches. And there are also general topic journals, like *JAMA* (the Journal of the American Medical Association), the *New England Journal of Medicine*, and *Nature*, the major British general science journal. If you've never had occasion to handle a medical journal, you might wonder what's inside. Your personal physician probably leaves copies of *Sports Illustrated* and *People* in the waiting room—not copies of *The Annals of Family Practice Medicine*. Medical journals are expensive to produce, by the way, and the expenses are passed along to the subscriber—they commonly run a couple hundred dollars or more a year. The April 19, 2006, issue of *JAMA* [2006;295(15):1741] describes the contents of medical journals:

• *Research articles report the results of research studies on a range of topics varying from the basic mechanisms of diseases to clinical trials that compare outcomes of different treatments. Research articles on important topics may be covered by the news media after they are published in a medical journal.* (Note that when you read a news story about a new study saying that it is now okay to eat eggs or chocolate, this information came from a research study published in a medical journal—and you can go right to the source of that new story and read the study yourself. Often, so-called news stories actually put a spin on published research in order to make news more interesting. As an MT with a medical vocabulary, you have the ability to analyze published research for yourself, and you should do so—at least before you overdose on eggs or chocolate or whatever!)

• *Review articles summarize and analyze the information available on a specific topic based on a careful search of the medical literature. Because the results of individual research studies can be affected by many factors, combining results from different studies on the same topic can be helpful in reaching conclusions about the scientific evidence for preventing, diagnosing, or treating a particular disease.*

• *Case conferences and case reports may be published in medical journals to educate clinicians about particular illnesses and how to treat them.*

• *Editorials in medical journals are short essays that express the views of the authors, often regarding a research or review article published in the same issue. Editorials provide perspective on how the current article fits with other information on the same topic.*

• *Letters to the editor provide a way for readers of the medical journal to express comments, questions, or criticisms about articles published in that journal. Short research reports and case reports may also be published as letters to the editor.*

How do you know which medical journal(s) you should consult? Before the Internet existed, you had to live near a teaching hospital or a medical school to get your hands on an assortment of medical journals. Today, virtually all medical journals are made available online, although full articles can be viewed only by subscribers. The abstracts, however, are free. And it turns out that abstracts are all an MT needs!

What's an Abstract?

Review articles and case conferences/studies are really the meat of medical journals, but they can be lengthy and full of research jargon, making them difficult to read. This is true not only for MT readers but also for physicians. They want an overview of an article in order to determine if they need to take the time to study it in detail. They are looking for a short summary that covers the relevant points, i.e., what was studied and why, what was involved, and what were the conclusions? Authors provide this information at the beginning of articles in the form of abstracts—a summary paragraph that reduces all the gobbledygook into just the main points.

The best part about an abstract (other than being free) is that the author really has written it with the needs of the MT in mind, although not intentionally so. What starts out as a 10- or 15-page research report has been distilled into a single paragraph that includes all the important terms (drug names, procedure names, equipment names, eponyms) and medical information (recommend treating disease X with 100 to 200 mg of drug Y but never drug Z in any form) and examples of current usage (capped, hyphenated, whatever). Nearly all of the extraneous information (extraneous to the needs of the MT) has been filtered out, including most of the language that describes research studies that a dictator would never use in a medical report.

Searching Medical Journal Abstracts on PubMed

And now it's time to meet PubMed (**www.pubmed.com**). PubMed is a free search engine of the MEDLINE database of the United States National Library of Medicine at the National Institutes of Health. It indexes over 5000 medical journals from more than 80 countries, from the 1950s to as recent as this afternoon. This article introduces some basic search tips, but the best way to get the most from PubMed is to go through the tutorial on the PubMed site. This is recommended even if you are already a regular user of this search engine. The link to the tutorial appears on the left side of the PubMed home page and is clearly marked. It's invaluable. In addition, extra features are available to those who register for a free NCBI account. This link is also available on the PubMed page.

After registering for a free NCBI account and signing in, click on "MyNCBI" in the blue panel on the left side of the window. Then click on "user preferences." Choose a highlighting color, and all of your search terms will be highlighted when you display your results as abstracts, making them easier to see.

You can always just type in any old word or phrase, click Go, and you will get results. It can be that simple. But you can also make use of search techniques to narrow down your results, giving you a better chance of getting useful information very quickly.

• Use AND, OR, or NOT with search terms. Example: **liver disease NOT cirrhosis**.

• Use quotations for specific phrases. Example: "**heart disease**" produces different results than just **heart disease** without the quotes (which would pull every record with the word "disease" whether or not it contained "heart").

• Use parentheses to combine terms and asterisks for wild cards. Example: To find out if hip replacements are being done endoscopically, do a search for **(total hip arthroplasty) AND endoscop*** to yield the results of every combination of the first phrase with all words that begin with endoscop, e.g., endoscopy, endoscopies, endoscope, endoscopes, endoscopist, and so on.

Resolving Conflicts

With basic search techniques, you can easily find new, old, and hard-to-find terms. You can also read through abstracts to look for medical concepts. But how do you resolve disputes between references? Although no reference is completely error free, most conflicts are a result of differences in current usage at the time the reference went to print. When references disagree, you have to make a choice. Choosing the newer reference isn't automatically the right choice as current usage preferences can change in a matter of months, and the research supporting any textbook appearing in print is going to be at least 6 months old the day it is published. The smart thing to do in the case of a conflict is a quick literature search on PubMed to determine current usage for yourself.

Here's an example of resolving a conflict. One dictionary shows *caliceal* and another shows *calyceal*. Which one do you use? Searching PubMed for **caliceal NOT calyceal** yields 371 cites, while **calyceal NOT caliceal** comes up with 333 cites. This is not really a significant difference; both spellings are regularly used. This means that you can use either spelling unless your employer has expressed a preference, although you should be consistent within a single document.

A tougher one to evaluate is the international normalized ratio, a derivative of the prothrombin time. You can find it in various references as *PT-INR*, *PT/INR*, and less frequently as *PT INR* or *PTINR*. A PubMed search shows **PTINR** with just 1 and **PT INR** with 5 citations. "**PT/INR**" (searched in quotes

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to retain the punctuation) is used in 20 articles, while **PT-INR** is used in 78. Hyphens are disregarded by PubMed, even if you put a term in quotes, so in this search it was necessary to display the complete abstracts and then use Ctrl+F to locate which articles used *PT INR* and which used *PT-INR*. That *PT-INR* wins out over *PT/INR* actually makes sense when you consider the meaning of the term. It is not the ratio of the PT to the INR but the ratio of the patient's PT to a control sample PT, raised to the value of an international standardized value. The result of this calculation is the *INR*, or more correctly, the *PT-INR*.

Interpreting Search Results

With the PT-INR example, we needed to look closely at the search results to determine if any factors needed to be taken into consideration. Consider each of the following as you evaluate your search results:

• **Translated articles**. Articles indexed in PubMed appear in English, but if they were originally published in another language, they have been translated into English. Translations may be scientifically accurate, but translators are often not native English speakers and cannot be relied upon for current usage. Spelling questions should not be settled with a translated article unless it is the only citation available. Click the Limits tab and check the box for English only, but look at your results and check for the original language as some translated articles may slip through. Ignore Canadian and British journals, which will contain British English spellings.

• **Age of research**. PubMed goes back to 1950 in some cases. You want to toss anything more than a few years old

Up Close: Analyzing an Abstract

Although an abstract is intended as an easy-to-read summary of a much more detailed article, it may not appear completely MT friendly on first glance. Let's look closer at a complex abstract to see just what we can learn from it.

In developed countries at least, ulcers related to *Helicobacter pylori* infection are becoming rarer. However, ulcers associated with the use of nonsteroidal anti-inflammatory drugs (NSAIDs) remain a major clinical problem, which has not been solved through the introduction of selective inhibitors of cyclooxygenase-2 (COX-2).

What **medical terminology** can we glean from this section? *Helicobacter pylori*, nonsteroidal anti-inflammatory drugs (NSAIDs), selective inhibitors of cyclooxygenase-2 (COX-2). These may or may not be new terms to you.

What about **medical knowledge**? There are two causes of ulcers under discussion—those caused by the bacterium *H. pylori* and those caused by NSAID drugs (like Advil). Like NSAIDs, COX-2 inhibitors (such as Celebrex) are used to treat arthritis, but in spite of the availability of COX-2 inhibitors, the incidence of NSAID-caused ulcers has not diminished.

Current usage? COX-2 is hyphenated. One abstract doesn't prove current usage; see the complete article for information on proving current usage.

Recent studies suggest that NSAID-induced ulcers can be prevented largely through co-administration of a proton pump inhibitor to block acid secretion in the stomach. In patients requiring aspirin therapy to prevent cardiovascular diseases, co-administration of aspirin plus a proton pump inhibitor was found to be safer than using another anti-platelet therapy that does not block gastric prostaglandin production (e.g., clopidogrel).

Terminology includes proton pump inhibitor (e.g., Prilosec or Nexium—if you don't know what a term means, look it up to build your vocabulary), gastric prostaglandin, clopidogrel (generic for Plavix).

Medical knowledge: *Co-administration* refers to doing two things at once; they are suggesting that in addition to prescribing an NSAID, it be combined with a PPI (proton pump inhibitor) to block acid secretion that combines with the NSAID to give you an ulcer. If you are taking aspirin for heart disease, combining it with a PPI is safer than using a different anti-platelet therapy (like Plavix).

Several recent papers have clarified further the contribution of COX-2 to gastric mucosal defense and to the healing of ulcers. In some circumstances, COX-2 produces a highly potent gastroprotective substance (15-R-lipoxin A(4)), and analogues of this substance could have therapeutic value for preventing gastric ulceration.

Terminology: (15-R-lipoxin A(4)) This parenthetical term is the chemical name for a "potent gastroprotective substance." Unless you are looking for this specific chemical name, it isn't necessary to understand complex chemical names as they do not come up often in dictation. Just skip over it. Another term: analogue (similar chemical compounds, not necessarily having the same action).

Medical knowledge: COX-2s defend the gastric mucosa (picture little chemical compounds running around with weapons, if you are a visual learner). They achieve this defense by producing a specific chemical agent, of which analogues (related substances as yet undefined) may prove useful in preventing ulceration. Even if you don't understand it the way physician or a biochemist would, you can't say it isn't interesting!

Nitric oxide-releasing NSAIDs continue to show promise in terms of limiting damage to the gastrointestinal tract, even when given in combination with aspirin. Recent studies support the notion that platelets make a major contribution to ulcer healing, and the release of several key growth factors from platelets appears to be regulated by proteinase-activated receptors.

Terminology: nitric oxide, growth factors, proteinase-activated receptors.

Medical knowledge: Some NSAIDs release nitric oxide. Which ones? If you want to know this, you can look it up. These NO-releasing NSAIDs show promise (which means you should expect to see more of them around soon) and can be given with aspirin (good for those with heart disease). Proteinase-activated receptors regulate some platelet action (probably a good thing, but it is okay if you can't take this any further).

That you did not understand this abstract on the same level as would a gastroenterologist is expected. If you learned some new terms and concepts, great! The parts that you didn't understand 100% are okay since you weren't looking for that specific information. Some MTs assume that if they don't feel completely comfortable with their understanding of an abstract, the information is not useful, but that is not true.

Abstracts are a research resource as well as an opportunity for continuing education. Spend some time with them and you will learn to enjoy working with abstracts.

unless you are looking specifically for an old term. You can also set age parameters on the Limits tab.

- **Nonhuman or lab research**. You can also restrict your search to human results on the Limits tab. Some MT references are compiled by software mining of medical journal databases, and terms get picked up that would never appear in a dictated medical report. Extraneous terminology, e.g., stuff that happens only to laboratory rats or statistical terminology, pad reference books and add a level of noise you have to dig through. In addition, you end up with more soundalike terms that could lead to wrong conclusions. This is important in your own PubMed research but is also a question to consider when evaluating MT references.

- **Abbreviorrhea**. That's not a real word of course, but it takes just a cursory glance at medical journals and abstracts to see that abbreviations are used heavily. It is standard publishing practice to abbreviate recurring phrases on subsequent use in the same article, whether or not a common abbreviation exists for that phrase. In other words, an abbreviation is made up on the fly for the purpose of that article. This definitely does not correlate with appropriate abbreviation use in transcribed medical reports. Be careful not to assume anything about abbreviations appearing in medical journals. This can also be a problem for MT reference publishers relying on data mining without sufficient MT editorial oversight. Always be suspicious of new abbreviations. Novice MTs must be especially careful not to choose an abbreviation solely because it sounds similar to what is dictated—make sure it fits the context!

- **Lack of brand names**. A mentioned earlier in this article, if a brand name doesn't appear in a PubMed search, check Google. PubMed isn't exhaustive here.

- **Punctuation**. Be aware that some routine marks of punctuation, including hyphens, are ignored in indexing for a search engine. Try putting the term in quotes. If you are unable to isolate the punctuation, as was the case with hyphenation in *PT-INR*, use Ctrl+F to search through the complete text of the abstracts and count them. If there are too many to count, take a representative sample and extrapolate your results.

Drawing Conclusions

If you are searching for a term and you find it, your work is done. If you are settling a dispute about usage or obtain conflicting results, you need to carefully interpret your data, as explained above, but then draw conclusions about how to proceed. In both of the above examples, with caliceal versus calyceal and PT-INR, it was necessary to draw conclusions about the meaning of the results. If usage overwhelmingly favors one result, you can feel confident about your choice. If more than one form of a term is used in hundreds of articles, there may be no clear-cut favorite—and the choice is yours to make. If the results are a little ambiguous, as it was with PT-INR, your conclusions need to take in evidence from other sources, such as considering the mathematical formula that produces the PT-INR. Drawing conclusions after evaluating all the evidence is an example of critical thinking.
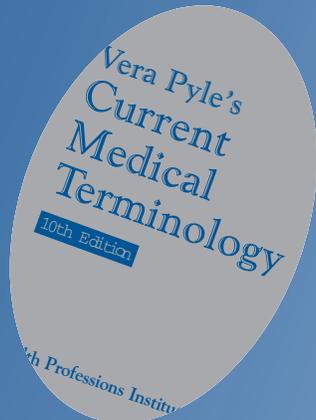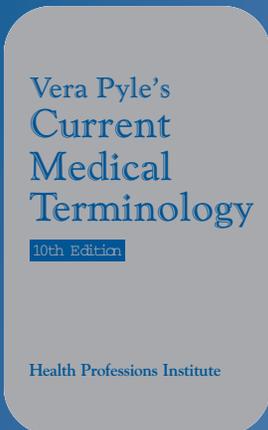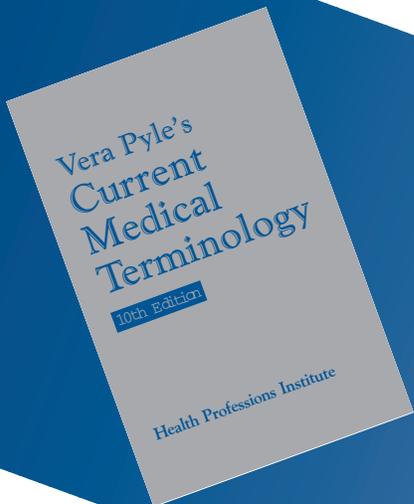
In summary, medical journal abstracts are a primary resource for medical transcriptionists. They are freely available and easy to work with, if you learn how to use the PubMed search engine and understand how to interpret your results.

For those who would like to read complete journal articles for personal growth or CECs, you can set Limits to full text at PubMed or you can use PubMedCentral <**http://www. ncbi.nlm.nih.gov/sites/entrez?db=PMC**>, which indexes full-text articles. Some of these articles may be accessed without charge; others may require a fee or a subscription for access.

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MRI procedures.

anvil dunk—a procedure used in laparoscopically performed gastric bypass to construct a gastrojejunostomy. The head of a stapling anvil is used to invaginate the stomach wall in order to bring the surgically created openings in the stomach and jejunum into apposition and stabilize them while they are being sutured together. See also *dunked end-to-end anastomosis*.

beak sign (Radiol)—abrupt, smooth of the distal esophagus on an indication of

per plete separa more sensitive mea LDL subfractions in plasm

8-to-S-plasty—a modified technique for closing a skin defect shaped like an 8 (two adjoining round lesions). The traditional method of repair by creating a single elliptical defect sacrifices healthy skin. In the Burow 8-to-S plasty, one triangle of skin with its apex at the constriction in the figure 8 is advanced to close one of the circular defects, and the other triangle of skin is advanced to close the other. No incisions are required and no skin is sacrificed. The suture line after closing resembles an "S".

odd facet of the patella—the 7th facet of the articular surface of the patella, being the most medial portion. Only at 135 degrees of flexion does the odd facet contact the medial femoral condyles. Therefore, in most patients, it is a very underused part of the articular surface. Underuse has been incriminated as a cause of damage to the articular surface, an example being chondromalacia.

rendezvous laparoendoscopic technique—a technique used in endoscopic sphincterotomy to facilitate the identification and cannulation of the papilla. Using this technique, a guidewire is inserted through the cystic duct, caught with an endoscopic polypectomy loop, extracted from the operative channel and cannulized with a sphincterotome. This is then pulled through the papilla in the common bile duct, thus completing the "rendezvous